EXHIBIT A

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Page No.

NATIONAL STARCH

Project No. 6122 | 1295Xff1 Date Started

Object Preparation of enzyme degraded Guar and Locust Bean Gum.

Guar Gum
2 kg of Guar Gum
Solids → 20%
Sodium Benzoate → 0.1% per solution
ph → 4, T = 70°C
gramimase enzyme

Locust Bean Gum
2 kg of Locust Bean Gum
Solids → 20%
Sodium Benzoate → 0.1% per solution
ph → 4 T = 70°C
Gramimase Enzyme

Procedure: 0.1% Sodium Benzoate dissolved in deion. H_2O, ph → 4, and to 70°C and placed 5 gallon pail in constant temp. water bath 70°C then added 10 ml of gramimase/1 kg of Guar Gum and added 2 kg of Guar Gum slowly. Add until all 20-25% RS. The second packet added 10 ml gramimase/1 kg Locust Bean Gum and then added 2 kg of Locust Bean Gum and react till 20-25% RS.

SAMPLE	Amount of enzyme used	Rx (Hrs) Time	% RS	SAMPLE	Amount of enzyme	Rx Time (Hrs)	% RS
6231:134-1 (Guar Gum)	10 ml / 1 kg Gum	O/N 20 hrs.	→ 12 % RS	6231:134-2 Locust Bean Gum	10 ml / 1 kg of Locust Bean Gum	1 hr.	→ 25% RS. Used 20 ml of 1% solution + deionized enzyme mixture 3:1 HCl solution ph 4 → 2. 38% RS after S.D
	added add enzyme	0/4 hrs	16% RS				
	7 ml / 1 kg of gum	98 hrs →					
	added 5 ml/kg gum	O/W 72	→ 17% RS used 31 ml of 1% solution + deionized 20% RS after S.D				

OBSERVATION:
These larger quantities were prepared to examine the functional properties of these materials in food systems.

After witnessing, corrections or changes may never be made in the grid area but may be noted at any time in this margin.

WORK OF: Dave Smith DATE:

I WITNESS THIS DOCUMENT AND UNDERSTAND ITS CONTENTS

M. Berley
Signature Date

Project No. 691.2 / 1412 FEF

Date Started

Object: Preparation of enzyme degraded tamarind (big batch)

Materials:

2 1/2 kg of tamarind gum
0.1% Sodium Benzoate
Solids → 20%
T → 58°C
Celluclast enzyme (about 25 ml/1 kg gum)
ph → 5
(6231:137-1)

300 g of tamarind gum (new base)
0.1% Sodium Benzoate
Solids → 20%
T → 58°C
ph → 5
Celluclast enzyme (about 20 ml / 1 kg of gum)

Procedure:

Sample 6231:137	Amount of enzyme used	RX Time (HRS)	%RS
6231:137-1	25 ml of Celluclast enzyme / 1 kg of gum	20 hrs	→ 22 % determined by HCl (3:[illegible])
6231:137-2	20 ml of Celluclast enzyme / 1 kg of gum	20 hrs	→ 23 % determined by HCl (3:[illegible])

Observation: The big batch of tamarind 6231:137-1 will be submitted to Food lab (along with guar and locust bean gum) to examine the functional properties of these products (also evaluated in cakes and puddings).

Dana [illegible]

M. [illegible]

Signature